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**PUBLIC SAFETY AND HOMELAND SECURITY BUREAU SEEKS COMMENT ON 911 NETWORK RELIABILITY RULES**
**PS Docket No. 13-75**

**Comments Due: July 16, 2018**
**Reply Comments Due: August 13, 2018**

COMMENTS OF INDIGITAL (INdigital) submits the following comments in response to the Bureau's Public Notice in the above captioned proceeding.

The Bureau seeks comment on a variety of matters related to the existing 9-1-1 reliability rules.

INdigital's comments are limited to those areas where it has direct experience in the issues of the docket.

**Request for Comment**

**A. Current 911 Reliability Rules**

*Effectiveness of Current 911 Reliability Rules.* As a threshold matter, the Bureau seeks comment on the effectiveness of the existing 911 reliability rules.

Have the Commission's 911 reliability requirements for covered 911 service providers been effective in safeguarding the nation's legacy, transitional, and Next Generation 911 (NG911) networks from preventable outages?

The use of audits and testing to determine if the public can expect service continuity has been helpful in identifying single fault domains (points of failure). From a design perspective, the requirements have allowed us to create several new technical practices that ensure service continuity.

Are there examples of specific circuit diversity, central office backup power, and network monitoring measures that have been taken because of the Commission's 911 reliability rules?

The requirement for circuit diversity has been beneficial to the reliability of service. However, the rules of what constitutes a 'covered provider' and the circuits that could be available are not as clearly defined as they need to be.

Some of the transport providers would have facilities that would enable a 911 system service provider to have improved redundancy. Out of an unfounded fear of making them required to perform audits and be compliant with the commission's rules, these providers have taken measures to prevent the use of their facilities for any function of 911.

This creates an unusual circumstance where this class of transport provider offers an interconnected service to the public, making them an originating service provider. But they will not allow the 911 system service provider access to their networks, which prevents the creation of the most reliable NG9-1-1 ESInet practical.

The Commission should refine its rules to make it clear that it is the 911 System Provider that has the reporting obligation, not the commodity transport provider. This practice on the part of certain of the transport providers is limiting the development and deployment of robust ESInets, and does not serve the public interest.

Do the Commission's current 911 reliability requirements adequately encompass transitional and NG911 networks?[1]

What are the most effective measures that covered 911 service providers have implemented to prevent and mitigate outages in networks that include transitional or NG911 elements?

We have found that legacy providers did not have network design objectives of redundancy and alternate routing as a best practice. For example, many legacy 911 systems have single points of failure, typically at the transport layer as well as the application layer(9-1-1 Tandem).

Intercompany ordering is artificially by the legacy providers who desire to 'keep the legacy elements in place' even as the PSAPs (and other call end points) are migrated to an NG ESInet.

These are frequently economic decisions, and to not consider the technical advantages that could be created by the advantages of NG9-1-1 design.

[1] An example of a provision specific to NG911 is defining "critical 911 circuits" in a manner that includes NG911 facilities that are functionally equivalent to legacy facilities. *See* 47 CFR § 12.4(a)(5) (defining "critical 911 circuits" as "911 facilities that originate at a selective router or its functional equivalent and terminate in the central office that serves the PSAP(s) to which the selective router or its functional equivalent delivers 911 calls, including all equipment in the serving central office necessary for the delivery of 911 calls to the PSAP(s).").

Commenters are also invited to submit any information or materials that demonstrate improvements in 911 network reliability since the 911 reliability rules' effective date, including any contribution by the rules to those improvements.[2]

If the rules have not resulted in measurable improvements to 911 reliability, how should the Commission change these requirements?

The rules have contributed to improved awareness and reporting when reliability has not been attained. There are no doubt other improvements that were the result of internal system and design audits.

In our view, the benefit has primarily been in the increased awareness and critical conditions that occur when an outage takes place.

That said, there have been several outages since the rules were implemented, which indicates that the Commission should continue to promote the development of improved industry practices and the creation of alternate methods of ensuring 911 system reliability.

*Alternatives to Current 911 Reliability Rules*. The Bureau seeks comment on whether the Commission should replace the existing 911 reliability rules with an alternative framework.

For example, would it serve the public interest to require covered 911 service providers to take reasonable measures to ensure the reliability of their 911 networks, but without mandating specific measures to achieve that outcome (*i.e.*, eliminate specific requirements with respect to 911 circuit diversity, availability of central office backup power, and diverse network monitoring)?

How would such a general reasonableness requirement be measured and implemented?

Should such a general reasonableness requirement apply only to transitional or NG911 networks, with the existing 911 reliability rules continuing to apply to legacy 911 networks?

The goal of service continuity should apply to all classes of 911 service without regard to the underlying technology. The general reasonableness requirement is a baseline of conformance that a 911 System Provider should attain.

As technology, new techniques, and practices for NG9-1-1 Systems emerge, these network configurations and techniques can take on the form a general reasonableness alternative for the remaining legacy systems that are connected to the ESInet.

The 911 industry has been focused on the requirements for NG9-1-1 systems and their operation. As these systems mature and evolve, the Commission should encourage the development of new methods that ensure service continuity in the design and implementation of ESInets.

[2] *See Improving 9-1-1 Reliability; Reliability and Continuity of Communications Networks, Including Broadband Technologies*, 79 Fed. Reg. 3123 (Jan. 17, 2014) (announcing the 911 reliability rules' effective date 30 days from the date of this document's publication, *i.e.*, on February 18, 2014).

Would such a general reasonableness requirement provide covered 911 service providers with greater flexibility in network administration, while also ensuring sufficient care in 911 networks operation?

As another alternative, should the Commission require covered 911 service providers to certify to implementation of certain best practices?

The emergence of best practices is a significant leap forward, and should be encouraged. Unfortunately, the 911 industry focuses more on practices that are historically proven 'best', which limits innovation and new approaches that are commonly used in other telecom industry segments.

For example, the Commission and the industry have struggled with the abuse of least cost routing (LCR), which resulted in the failure to deliver voice calls to rural LECs.

In a fresh look at what became a best practice for long distance (albeit put in place for economic reasons) the concept of having automatic alternate routes - which is a variation of least cost routing - could be characterized as 911 ensured delivery routing.

This would be a significant benefit to ensure the delivery of a 911 call if the primary call route were unavailable. This type of innovation needs to be supported by the Commission's rules.

If so, what best practices would be appropriate for this purpose, and are they specific enough to ensure a reasonable degree of reliability?

*Utility of the Certification Process.* Finally, in the event the Commission continues to require covered 911 service providers to take reasonable measures to ensure 911 circuit diversity, availability of central office backup power, and diverse network monitoring, should the Commission continue to require annual certification to the satisfaction of these measures?

If so, should the Commission revise the frequency of certification filings? What frequency of filings (*e.g.*, biannual or triannual filing rather than annual filing) would be sufficient to ensure that networks remain reliable through the course of reconfigurations and other network changes, based on relevant data and experience?

If certifications have not provided significant additional value, should the Commission eliminate the certification requirement from the 911 reliability rules?

The Commission should consider biannual certification for existing networks, with the provision that if a network has had significant change (for example has transitioned from legacy service to an NG ESINet that the 911 System Provider has an obligation of submitting a certification report to the Commission.

This would have the benefit of lowering the cost of compliance for legacy, unchanging 911 Systems, while ensuring the transitioning and emerging systems have attained a level of review that complies with the regulatory objective.

### B. Scope of Covered Entities Subject to 911 Reliability Rules

*Definition of a Covered 911 Service Provider.* In the 2013 911 Reliability Order, the Commission limited the scope of its 911 reliability requirements to covered 911 service providers' 911 networks.[3]

Does the growing diversity of industry participants in the transitional and NG911 environment continue to be adequately encompassed by the term "covered 911 service provider"?

Are there instances where it may be unclear whether a service provider fits within this category, as it is currently defined?

There is an emerging class of 911 Provider that is comprised of the local authority having jurisdiction. Many of these regional networks are being deployed without the benefit of consideration of the Commission's regulations,

Should the Commission revise its definition of a "covered 911 service provider," and if so, how?

Are there other examples of service providers that are not considered "covered 911 service providers," but that may nevertheless be integral to supporting 911 reliability?

The Commission has made it clear who is a "Covered 9-1-1 Service Provider" As commented mentioned above, the addition of the emerging class of 911 Provider that is comprised of the local authority having jurisdiction should have similar responsibilities.

There are transport providers who furnish critical infrastructure to the 9-1-1 Service Provider.

The network elements and transport links provided by these entities are integral the reliability of transitional and NG9-1-1 services. The Commission should clarify their obligations of reporting so that they have an incentive to make these services available to meet the public interest.

[3] *911 Reliability Order*, 28 FCC Rcd at 17488, para. 36.

### C. PSAP Notification Requirements

*Effectiveness of the Current PSAP Notification Requirements.* In the *911 Reliability Order*, the Commission required covered 911 service providers to: 1) notify affected PSAPs within 30 minutes of discovering a 911 outage by telephone and in writing, including contact information for the affected service provider; and 2) update PSAPs within two hours of their initial contact, to disclose the nature of the outage, its best-known cause, geographic scope, and the estimated time for repairs, if available.

Are the current PSAP notification rules for covered 911 service providers effective in helping PSAPs gain timely information about outages that affect 911 services and take any appropriate or available measures to help maintain continuity of access to emergency services?

INdigital has provided a standardized notification system since the implementation of the Order. This includes advisories of mass media and social media notification to inform the public of unexpected service impairments.

This approach has been well received by the PSAP communities we serve.

*Standardization.* Last year, the Bureau convened consumer groups, public safety entities and service providers in the 911 ecosystem to participate in a workshop to discuss best practices and develop recommendations for improving situational awareness during 911 outages.[4] Among other recommendations, workshop participants generally agreed that service providers should offer PSAPs outage notifications in a consistent format to facilitate comprehension of outage information.[5] The Alliance for Telecommunications Industry Solutions' (ATIS) Network Reliability Steering Committee subsequently reconvened workshop attendees to develop a model PSAP notification template, which we understand is forthcoming.

Should the Commission standardize the way covered 911 service providers notify PSAPs of outages that potentially affect them? If so, does the ATIS template provide a reasonable model on which to base a PSAP notification template?

INdigital supports the ATIS templates and methods proposed.

*Streamlining.* Finally, public safety representatives participating in the Bureau's 911 workshop stated that they can receive multiple notifications regarding a single outage, which can give the mistaken impression that separate 911 outages are occurring simultaneously in multiple provider networks.[6] This

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[4] *See Public Safety and Homeland Security Bureau Announces Agenda for Workshop on Improving Situational Awareness During 911 Outages*, DA 17-798, Public Notice, PS Docket No. 17-68 (PSHSB Aug. 2017); *Public Safety and Homeland Security Bureau Shares Recommended Practices from September 11, 2017 911 Workshop*, DA 18-6, Public Notice, PS Docket No. 17-68 (PSHSB Jan. 2018).

[5] *See Public Safety and Homeland Security Bureau Shares Recommended Practices from September 11, 2017 911 Workshop*, Public Notice, 33 FCC Rcd 11, 12 (PSHSB Jan. 2018).

[6] *See* FCC, Improving Situational Awareness During 911 Outages, at 109:00, https://www.fcc.gov/news-events/events/2017/09/improving-situational-awareness-during-911-outages (last visited May 29, 2018).

may result in inaccurate public messaging about the outage, the misallocation of resources, and inappropriate remedial steps. At the same time, in the increasingly complex transitional NG911 environment, covered 911 service providers experiencing a 911 outage sometimes cannot determine in which network the outage originates within the timeframe allowed by the Commission's rules.

Is it feasible to reduce the number of notifications that PSAPs receive for the same outage event, while still ensuring PSAPs have adequate situational awareness of 911 outages? If so, what measures could the Commission take to streamline the number of PSAPs receive?

Generally, it is commonplace for PSAPs to receive multiple reports of public incidents in the course of rendering service. Analyzing conflicting styles and content of outage information is where confusion begins.

For providers that follow the ATIS templates, this should limit conflicting formats of information, and provide a clear source of the advisories and transmittals.

-# # # end of comments-